**SESSION 7 – ITS TECHNOLOGY AND INFORMATION**

**CHAIRS AND COORDINATORS**
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**TITLE OF PRESENTATIONS AND SPEAKERS**
"Regional Information Sharing Systems – Internet Based" by John Lutz, Transcentric Corporation

"Optical Scanning Technology for Marine Gate Systems" by Terry Gibson, Science Applications International Corporation

"X-Ray Technology for Container Inspections" by Vic Orphan, Science Applications International Corporation

"Freight Information Real-Time System for Transport" by Karen Tobia, Port Authority of New York and New Jersey

**SUMMARY**
The panel addressed and looked at how it can enhance security. Some of the technology is in place, like optical character recognition technology. In talking about technology, the most important thing is how it allows information sharing among partners who do not normally share data, which includes most competing intermodal entities.

Regional Information Sharing Systems – Internet Based
DRMEC is the Delaware River Maritime Enterprise Council (DRMEC). It is a non-profit organization, funded by the State of Pennsylvania. The DRMEC mission is to demonstrate an integrated intermodal transportation data system for Pennsylvania, for the port of Philadelphia and its corridors. This project will have a national scope because it can assist with deployment of data across the supply chain. The goal of DRMEC is to facilitate end-to-end electronic communication and tracking of goods and equipment by data capture. A data center called, Rapid Center, will allow computer systems to talk to each. The center will be able to integrate legacy systems into one common, neutral format that will serve customer needs. Rapid Center is going to be owned and developed by the State of Pennsylvania and run by a trusted third party to provide a neutral platform for data. The Rapid Center will assist with threat detection because it is a centralized, neutral, secure, portal that is will provide reliable, current information.

Optical Scanning Technology for Marine Gate Systems
Early image processing system activities dealt with railroads by reading the numbers on the side of railcars. Images were acquired and 45 minutes later you could see the number most of the time. The early read rates at marine terminals were equally as good, about 32 percent. In 1993, there was a test in Los Angeles and they were never able to achieve more than 50 percent read rate. Of the 50 percent that they actually read, 50 percent was wrong. In Jacksonville a 90-day test in 1994 was able to achieve about 75 percent read rate. The final number was around 77 percent with a 10 percent error rate. That is still not acceptable. Today, there are significant improvements of the OCR technology.

At the UP Railroad facility in Kansas City, Missouri, over a two-year period of development, a read rate of 87 percent was achieved. Now, the average time to complete in-gate and out-gate processes is less than 90 seconds. Eliminating congestion at the gate is one of the advantages of the technology. But, the technology by itself doesn't solve the problem. The OCR is one piece of the overall solution, integrating it with the gate technology. You need to integrate all the necessary technologies, using expert systems with other technologies. Even if you are going to use manual input, you need to be verifying that it is a valid number, that is a usable number, and it is data that fits into your system process.

X-Ray Technology for Container Inspections

An advantage of the VACIS (vehicle and cargo inspection system) is its use of gamma rays. X-rays come from an x-ray tube electrically generated and gamma rays come from an isotopic source. The gamma ray source is a very small pellet, just a few millimeters in diameter, and it is a tungsten-lead shield and it projects a fan-shaped beam. The fan-shaped beam impinges on a linear array of very sensitive sodium iodine detectors. These detectors are only three inches thick, which makes them very efficient – it does not require a lot of gamma ray photons in order to make an image. In fact, unlike x-ray systems, this system can produce an image with approximately 100 times less radiation dose, which is very important because in many of the applications, there are people hidden in the containers – they are not supposed to be there, but sometimes people smuggle themselves or others inside containers. They should not be exposed to high levels of radiation. The dose given to a person inside a container is equivalent to being in an airplane at 30,000 feet for two minutes. The signals from the linear array of sodium iodine detectors are processed with a very simple PC-based workstation and the scanning is very fast. A 40-foot container can be scanned anywhere from 10 seconds to about one minute. Today, there are 30 VACIS systems that U.S. Customs Service bought and about 25 of them are currently operational mostly on the southwest border.

Freight Information Real-Time System for Transport

The concept of FIRST (Freight Information Real-Time System for Transport) is to take information about cargo movement and put it in one place to be accessed by the community that uses it. Next, the waterside information is integrated with the landside information to create a port information management system – a one-stop shopping site. FIRST is not a proprietary system. The Port Authority is leading the effort with money from federal sources and the Port Authority, to build the system. The system uses EDI message sets for the actual bill of lading, status changes, manifests, and that information is sent via flat file (FTP) over the internet. The system also incorporates the Port Authority sea link database of trucking companies and truck drivers. Every trucking company and truck driver has to have a sea link card and be registered in the sea link system to do business at the port. So, there is a great database of over 35,000 to 40,000 truck drivers that come through the port. FIRST is on the web at www.firstnynj.com. FIRST was

officially launched on September 5 and was not affected by the events of the 11th and as a matter of fact, FIRST did become a great source of information. The Port was able to post a lot of information about the port activities, Coast Guard activities, etc. on FIRST almost immediately and we have been continuing that. A registered carrier or a shipper or broker could actually go into FIRST and nominate a trucking company for a particular container. The nominated trucking company has the ability to actually go in and assign the driver through the sea link database. Then the carrier and the terminal can know who the driver is going to be for that particular load. All registered users have the ability to create watch lists where they would just enter a container that they are watching for status changes and the screen refreshes every 30 seconds and it constantly updates as the data is coming in.